C L A I M S

1. A catalyst or a precursor therefor in the form of a fixed arrangement, wherein the fixed arrangement comprises at least two layers, the first layer comprising as a catalytically active metal or precursor therefor rhodium or a rhodium compound and the second layer comprising as a catalytically active metal or precursor therefor iridium, osmium or platinum or a compound thereof.

2. A catalyst or a precursor therefor according to claim 1, wherein the fixed arrangement is a fixed bed of particles.

3. A catalyst or a precursor therefor according to claim 1, wherein the fixed arrangement comprises as carrier a porous monolithic structure, preferably a ceramic foam.

4. A catalyst or a precursor therefor according to any preceding claim, wherein the length of the second layer is at least the length of the first layer and at most 50 times the length of the first layer, preferably at least two times the length of the first layer, more preferably at least three times the length of the first layer, even more preferably at least four times the length of the first layer.

5. Catalyst particles or catalyst precursor particles comprising a first, outer layer comprising as a catalytically active metal or precursor therefor rhodium or a rhodium compound and a second layer comprising as a catalytically active metal or precursor therefor iridium, osmium or platinum or a compound thereof.

6. A catalyst or a precursor therefor according to any of claims 1 to 4, or catalyst (precursor) particles

according to claim 5, wherein the catalytically active metal in at least one of the layers is associated with at least one inorganic metal cation or a precursor thereof in such a way that the inorganic metal cation is present in intimate association, supported on or with the catalytically active metal.

7. A catalyst or a precursor therefor or catalyst (precursor) particles according to claim 6, wherein the inorganic metal cation is selected from Groups IIA, IIIA, IIIB, IVA, IVB and the Lanthanides of the Periodic Table of the Elements, preferably is selected from Al, Mg, Zr, Ti, La, Hf, Si and Ba, more preferably is Zr.

8. A catalyst or a precursor therefor or catalyst (precursor) particles according to any of claims 1 to 7, wherein the second layer comprises iridium or an iridium compound.

9. A catalyst or a precursor therefor or catalyst (precursor) particles according to any of claims 1 to 8, wherein the catalytically active metal or precursor therefor is supported on an inorganic carrier material, preferably a refractory oxide, more preferably alumina, silica, zirconia, titania or a mixture thereof, still more preferably a (partially) stabilised zirconia.

10. A process for the catalytic partial oxidation of a hydrocarbonaceous feedstock, which process comprises contacting a feed comprising a hydrocarbonaceous feedstock and an oxygen-containing gas with a catalyst or with catalyst particles according to any of claims 1 to 9, preferably at a pressure in the range of from 1 to 150 bara, at a temperature in the range of from 750 to 1400 °C, and at a gas hourly space velocity in the range of from 20,000 to 100,000,000 Nl/kg/h.

11. A process according to claim 10, wherein the hydrocarbonaceous feedstock is selected from methane, natural gas, associated gas, a source of light

hydrocarbon, naphtha, LPG, middle distillates, kerosene, gasoil, oxygenates comprising alcohols, ethers, acids or esters, and mixtures thereof.

12. A process according to claim 10 or 11, wherein the hydrocarbonaceous feedstock and the oxygen-containing gas are present in amounts giving an oxygen-to-carbon ratio of from 0.3 to 0.8, preferably of from 0.45 to 0.75.

13. A process according to any of claims 10 to 12, wherein the feed is contacted with the catalyst at a pressure of from 2 to 100 bara, preferably of from 5 to 50 bara.

14. A process according to any of claims 10 to 13, wherein the feed is contacted with the catalyst at a temperature of from 850 to 1350 °C, preferably of from 900 to 1300 °C.

15. A process according to any of claims 10 to 14, wherein the feed is contacted with the catalyst at a gas hourly space velocity of from 50,000 to 50,000,000 Nl/kg/h, preferably of from 500,000 to 30,000,000 Nl/kg/h.